Work	Order	ID	62883
YYUIK	Oluci	117	- 04003

Tuesday, October 12, 2010 1:02:12 PM



Page 1

Item ID:

D205-634-041

Accept

Setup Start

Stop

Stop



**Revision ID:** 

Item Name:

Replacement Skidtube

Start Date:

10/13/2010

Start Qty: 1.00

**Required Date:** 10/29/2010 Req'd Qty: 1.00



Cust Item ID:

**Customer:** 

Reference:

Approvals:

Process Plan: MF

Date: 10-10-12 Tooling:

Date:

Date:

Run Start



Date:

SPC (Y/N):

Set Up/

**Run Hours** 

Tool ID

Tool # Plan

Code

Reject Accept Qty Qty

Reject Number

Insp. Stamp

Work Center ID **Draw Nbr** 

Sequence ID/

Description

Operation

**Revision Nbr** 

D2580

Rev D

100

Document Control

DOCUMENT CONTROL

Memo

0.00

0.00

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG002

110

CNC Bend 1

CNC Delta 100 Bender

0.00

BENDING MACHINE - SKIDTUBES

Memo

0.00

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

Dart	<b>Aeros</b>	pace	Ltd

W/O:		WORK ORDER CHA	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	ANGE   By   Date   Qty   c				Approval Chief Eng / Prod Mgr	Approval QC Inspector	
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Tuesday, October 12, 2010 1:02:12 PM

Item ID:

D205-634-041

Accept

Setup Start

Stop

Revision ID:

Item Name:

Replacement Skidtube

Start Date:

10/13/2010

Start Oty: 1.00

Rea'd Otv: 1.00



**Cust Item ID:** 

**Customer:** 

Reference:

Approvals:

Process Plan: Date:

Operation

Description

Tooling:

SPC (Y/N):

Set Up/

0.00

**Run Hours** 

Date:

Date:

Run Start

Stop

**Required Date:** 10/29/2010

Sequence ID/

Work Center ID

120

Skidtubes

Skidtubes

Memo

0.00 1- Deburr ends and remove marks bending marks

Date:

2- C'sink holes as per dwg without cutting fluid

3- Prepare tube for welding, remove alodine as required.

Tool ID

Tool # Plan

Code

Reject Accept **Qty** Oty

Reject Number Stamp

Insp.

130

Memo

OC5- Inspect part completeness to step on W/O

0.00

0.00

Quality Control

Dart Aerospace Li	n	
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W/O:	•	WORK ORDER CHANGES									
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Page 3

Insp.

Stamp

Tuesday, October 12, 2010 1:02:12 PM D205-634-041 Item ID: Accept Setup Start **Revision ID:** Stop Replacement Skidtube Item Name: Start Qty: 1.00 **Start Date:** 10/13/2010 **Cust Item ID: Required Date:** 10/29/2010 Req'd Qty: 1.00 **Customer:** Reference: Run Start Process Plan: Approvals: Date: Tooling: Date: Stop QC: Date: SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Accept Reject Reject **Work Center ID** Description **Run Hours** Code Qty Qty Number 140 0.00 Skidtubes 0.00

Skidtubes

Memo

1-Weld step D2576 as per Dwg. D2580 and A/R□□□ Aluminum Rod

BE 10/10/21

2-Prep per QSI 005 and weld crossbolt spacers D2579 as per Dwg. D2580, QSI

For D2579 spacers, weld one side, pass 3/8" drill weld other side, pass 3/8" drill A/R \( \sigma \) Aluminum Rod

3-Grind welds as per Dwg D2580 Grind flush ridge made from bending

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64", adjust stopper not to hit web. Deburr

5-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Deburr holes

6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

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W/O:		WORK ORDER	CHANGES			-	* .	
DATE	STEP	PROCEDURE CHANGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No: 0205-634-041

Fault Category: Skichber

NCR: Yes No DQA:

Date: 101022

Resolution: \_\_\_\_\_\_ Rework

Disposition: \_\_rework\_

QA: N/C Closed: \_

NCR:	2883	w WC	ORK OR	DER NON-CONFORMANCE	(NCR)			
		Description of NC		Corrective Action Section B	Verification	Approval	Approval	
DATE STEP		Section A	Initial Action Description Sign & Chief Eng Chief Eng Date		Section C	Chief Eng	QC Inspector	
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**Required Date:** 10/29/2010

Page 4

Item	ID:	:

Tuesday, October 12, 2010 1:02:12 PM

D205-634-041

Accept



Setup Start

Stop



**Revision ID:** 

Item Name:

Replacement Skidtube

Start Date:

10/13/2010

Start Qty: 1.00

Req'd Qty: 1.00



**Cust Item ID:** 

**Customer:** 

Reference:

Approvals:

Process Plan:

Memo

Date:\_\_\_\_\_

Tooling:

Date:

Start Run

Date: \_\_\_\_\_

SPC (Y/N):

Date:

Stop

Sequence ID/ Work Center ID

150

QC

Quality Control

Operation Description

QC10- Inspect visual per QSI004- ground welds

**Run Hours** 

0.00

0.00

Set Up/

Tool ID

Tool # Plan Code

Reject Accept Qty Qty

Reject Number Stamp

Insp.

160

QC

Quality Control

QC5-Inspect part completeness to step on W/O

0.00

0.00

S 10/11/01

170

HandFinish

Hand Finishing

Pressure Wash per QSI005 4.3

Memo

0.00

0.00

7 H 10/11/02 - 1'

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

W/O: WORK ORDER CHANGES									
DATE	STEP	PROCEDURE CHANGE By			Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval ·
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Tuesday, October 12, 2010 1:02:12 PM

D205-634-041

**Revision ID:** 

Item ID:

Item Name:

Replacement Skidtube

**Start Date:** 

10/13/2010

Start Qty: 1.00 **Required Date:** 10/29/2010 Req'd Qty: 1.00



Date:

Accept



Setup Start

Stop



**Cust Item ID:** 

**Customer:** 

Tool ID

Reference:

Approvals:

Process Plan:

QC: \_

Date:

Tooling:

0.00

0.00

SPC (Y/N):

Set Up/

**Run Hours** 

Date: Date:

Tool # Plan

Code

Run

Accept

Qty

Start

Stop

Reject

Qty

Number Stamp

BL10-11-2

Insp.

Reject

Sequence ID/ **Work Center ID** 

180

190

Powdercoat

Powder Coating

Operation Description

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

M 115271

Memo

START TIME: OVEN TEMPERATURE:

FINISH TIME:

Memo

QC

Quality Control

QC3- Inspect Part Finish

DATE STEP PROCEDURE CHANGE  By Date Qty Approval Chief Eng / Prod Mgr QC In Prod	
Part No: PAR #: Fault Category: NCR: Voc No. DOA: Date:	roval ·
Part No: PAP #: Fault Category: NCP: Voc No. DOA: Date:	•
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Resolution: Disposition: QA: N/C Closed: Date:	
NCR: WORK ORDER NON-CONFORMANCE (NCR)	
DATE STEP Description of NC Corrective Action Section B Verification Approval App	roval
Section A Section A Section A Section A Section Chief Eng Chief En	spector



Tuesday, October 12, 2010 1:02:12 PM

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Item	

D205-634-041

Accept



Setup Start



Stop

**Revision ID:** 

Item Name:

Replacement Skidtube

**Start Date:** 

10/13/2010

Start Qty: 1.00

**Required Date:** 10/29/2010 Req'd Qty: 1.00



Date:

**Cust Item ID: Customer:** 

Tool ID

Reference:

An	provals:
	DI 0 1 415.

QC:

Process Plan:

Date: \_\_\_\_\_

Tooling:

Date:

Date:

Tool # Plan

Start Run

Stop



Sequence ID/ **Work Center ID** 

200



HandFinish

Operation Description

Memo

Set Up/ **Run Hours** 

0.00

0.00

SPC (Y/N):

Code

10/11/09

Reject

Number Stamp

Insp.

Hand Finishing

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

\_4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R  $\square$   $\square$  Sikaflex-291  $\square$   $\triangle$ ///// Sikaflex expire date:  $\square$ //  $\square$ /

5-Wing Walk as per Dwg D2580 and QSI 005 4.4
Batch:

Oty Oty

Accept

Reject

W/O:		WORK ORDER CHANGES											
DATE	STEP	PROCEDURE CHANGE				Date	Qty	Approval Chief Eng / Prod Mgr	Approval ·				
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**Required Date:** 10/29/2010

Page 7

Tuesday, October 12, 2010 1:02:12 PM

Item ID:

D205-634-041

Accept

Setup Start

Stop

Revision ID:

Item Name:

Replacement Skidtube

**Start Date:** 

10/13/2010

Start Otv: 1.00

Req'd Oty: 1.00



Cust Item ID:

**Customer:** 

Tool ID

Reference:

Approvals:

Process Plan: Date:

Date:

Tooling:

SPC (Y/N):

Date:

Date: \_\_\_\_\_

Code

Tool # Plan

Stop

Reject

Otv

Run

Accept

Otv

Start

Insp.

Stamp

Reject

Number

Sequence ID/

Work Center ID

210

Quality Control

Operation Description

QC5- Inspect part completeness to step on W/O

Set Up/ **Run Hours** 

0.00

0.00

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for

Foreign objects per OSI 024

220

Packaging

Packaging

Packaging

Memo

Memo

0.00

Identify and pack for shipping as per PPPD205-634-041 Location:

PPP Rev:

230

Quality Control

QC21- Final Inspection - Work Order Release

Memo

0.00

0.00

10/11/1278) MF 10-11-11

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W/O:			WORK ORDER	CHANGES		.99			
DATE	STEP	PROCEDURE CHANGE			Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval- QC Inspector
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Tuesday, October 12, 2010 1:02:11 PM

Work Order ID: 62883

Parent Item:

D205-634-041

Parent Item Name: Replacement Skidtube



Start Date: 10/13/2010

**Required Date: 10/29/2010** 

Page 1

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:N⊞02.08.28□FP was QC5 in Step 27; Added QC5 to Step 30□KJ

IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD

IPP Rev. O 06.02.28 Added paperwork EC

IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM

Manufactured

No

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2580-1		Manufactured	No			110	Each	3.0000		1			

205 Skidtube bent detail

Location	Loc Oty	Loc Code
LG 1362353	2	
62047	1	
62048	1	
ST046	1	
59856	1	

Each

68.0000

Step (maching detail)

D2576-3

Location	Loc Oty	Loc Code
LG	68	
46661	20	
52215	48	

140

W/O:		WORK ORDER CHANGES									
DATE	STEP	PRO	CEDURE CH	ANGE	Ву	Date Qty	Approval Chief Eng / Prod Mgr	Approval· QC Inspector			
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Part No:		PAR #:			NCR: Yes	No DQA:	Date: _				
Resolution:			Disposit	on:	_ QA: N/C CI	osed:	Date: _				
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Bolt

W/O:		WORK ORDER CHANGES										
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Work Order ID: 6288 Parent Item: D20	83 05-634-041											
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W/O:			WORK ORDER CHANGES								
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Tuesday, October 12, 2010 1:02:11 PM

Work Order ID: 62883 D205-634-041 Parent Item: Parent Item Name: Replacement Skidtube **Required Date: 10/29/2010** Start Date: 10/13/2010 Start Oty: 1.00 Required Otv: 1.00 AN960C10L NAS1149C0332 Purchased No 200 Each 29.0000 50 50 Al 10/11/08 washer Location Loc Oty Loc Code ST245 29 1115832 107534 29 D3566-13 Manufactured No 200 Each 34.0000 Gasket Location Loc Otv Loc Code FP012 34 60209 8 61996 26 D3566-5 No 200 Manufactured Each 20.0000 10/11/08 Gasket Location Loc Qty Loc Code FP 60869 8 FP015 12 62463 12 D3566-1 Manufactured No 200 Each 9.0000 Gasket Location Loc Qty Loc Code FP015 B62892 57715 61992

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Tuesday, October 12, 2010 1:02:11 PM

Work Order ID: 62883 Parent Item: D205-634-041 Parent Item Name: Replacement Skidtube **Required Date: 10/29/2010 Start Date:** 10/13/2010 Start Qty: 1.00 Required Qty: 1.00 D3564-11 Manufactured No 200 Each 12.0000 Wearshoe Location Loc Qty Loc Code FP019 12 61708 12 D3564-13 Manufactured No 200 Each 34.0000 Wearshoe Location Loc Qty Loc Code FP17 34 59660 1 60862 9 61828. 12 62229 12 D3564-9 Manufactured No 200 17.0000 Each Wearshoe Location Loc Qty Loc Code FP 55334 1 FP019 16 60236 3 61709 13

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NCR:			WORK ORE	DER NON-CONFO	RMANCE	(NCF	3)	,		
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DATE	STEP	Section A	Initial Chief Eng	Action Descrip Chief Eng	tion	Sign 8	k   Sect	ion C	Chief Eng	QC Inspector
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Location		Ī	oc Qty	Loc Code		
FP			43	222		
	55546		19	Bloto		× 16
	58191		12	011/		
	59358		12	15-12-		
fpa			856	1		
	61762		856			
		200	Each	235.0000	16	16

D2594-1

Plug, 205 Skidtube

O-Ring, 205 Skidtube

Location	Loc Qty	Loc Code	
FP	183		
42807	112	1361862	χ(Q
55002	71	·	
FP14	52	1362893	
58434	15	_	
61932	37		

Manufactured

No

Dart Ae	rospace	<b>Ltd</b>						•	· eg
W/O:			V	ORK ORDER CHANGE	S				· · · · · · · · · · · · · · · · · · ·
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NCR:	·.	W	ORK OR	DER NON-CONFORMAI	NCE (NC	R)			
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NOTE: Date & initial all entries

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DESIG	* Ht	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHEC	KED	APPROVED	DRAWING NO. REV. D
	T	#	D2580 SHEET 1 OF 3
DATE			TITLE SCALE
07.0	2.27		205 SKIDTUBE ASSEMBLY NTS
Α		96.09.16	NEW ISSUE
В		96.12.02	AS MANUFACTURED
C		98.08.26	REDRAWN, INCLUDED DEO 9094/9097
О		07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183



QTY	QTY	Part Number	Description
-041	-045		
X		D2580-041	SKIDTUBE ASSEMBLY
	Х	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130	INSERT
		or AKS7-1032-130	
		or AKS4-1032-130	1
		or AELS-1032-130	
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

#### **GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:

SEE NOTES ON

PAGE 2 FOR D2580-041 AND

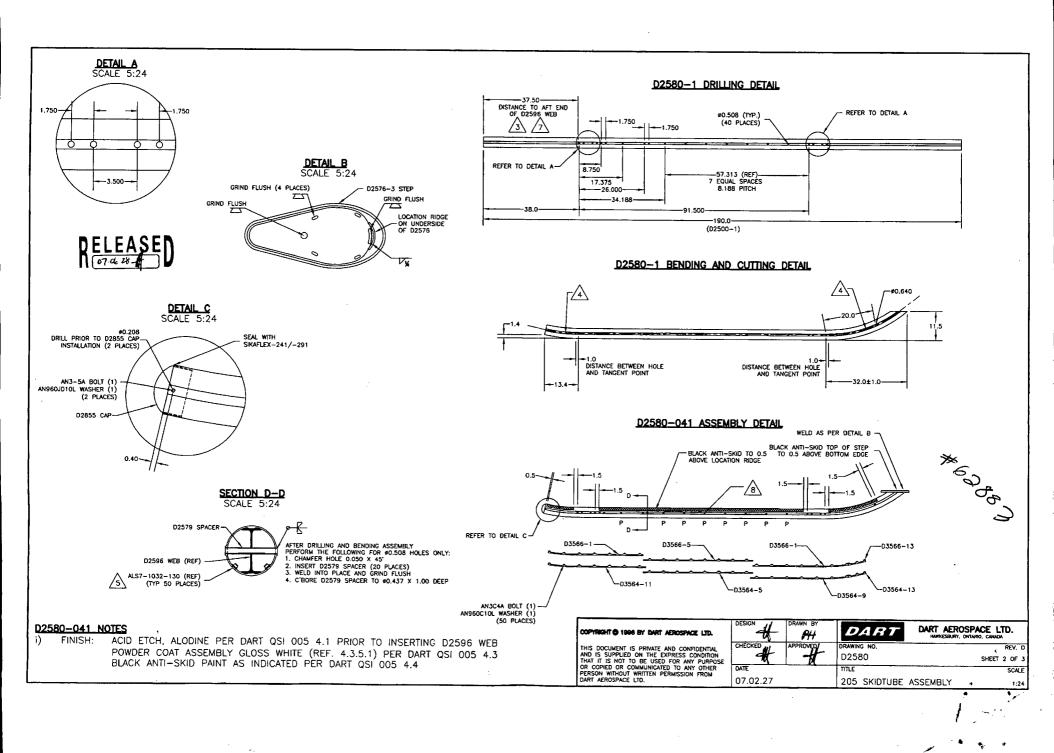
PAGE 3 FOR D2580-045

8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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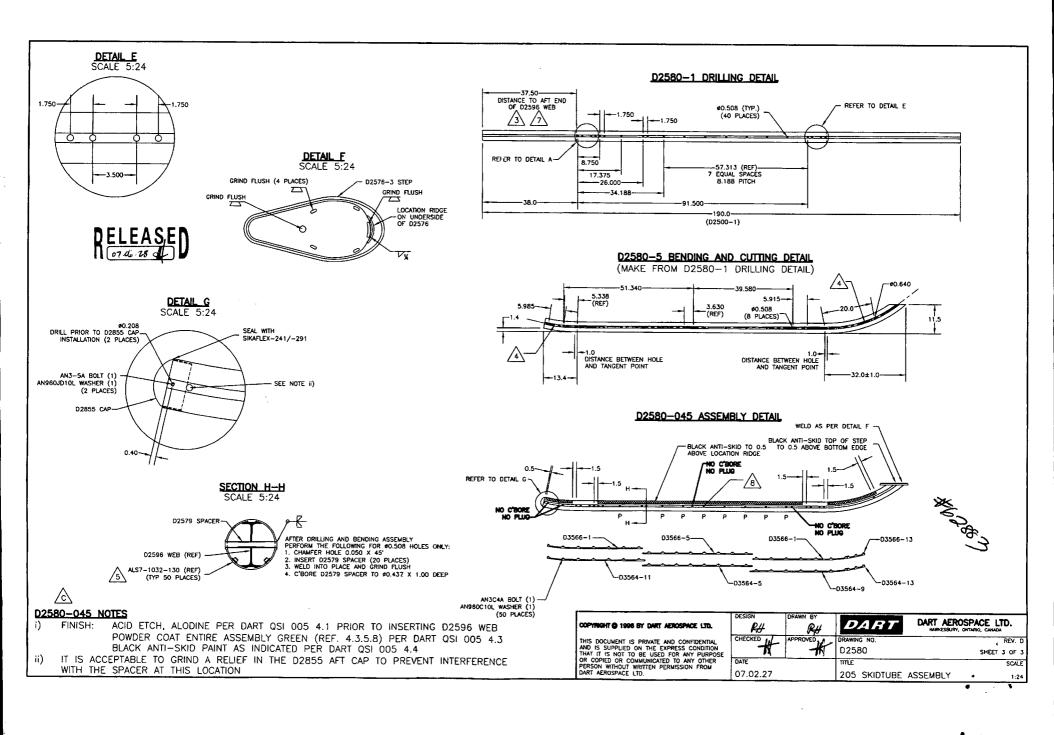
DATE STEP PROCEDURE CHANGE By Date Qty Chief E Prod I	val Approval
	1197   66.
Part No: PAR #: Fault Category: NCR: Yes No DQA: Da	e:
Resolution: Disposition: QA: N/C Closed: Da	e:
NCR: WORK ORDER NON-CONFORMANCE (NCR)	
DATE STEP Description of NC Corrective Action Section B Verification Appro	oval Approval
DATE STEP Section A Initial Action Description Chief Eng Chief Eng Section C Section C	

<sup>\*</sup>H:\\fPORMS\Quality Assurance\approved QA\NCRWO RevE



\* ~ \*

W/O:			W	ORK ORDER CHANG	ES			
DATE	STEP	PRO	CEDURE CH	ANGE	Ву	Date Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
								:
Part No	•	PAR #:	Fault Cat	egory:	NCR: Yes	lo DQA:	Date: _	
	R	esolution:	Dispositi	on:	_ QA: N/C Clo	sed:	Date: _	<del></del>
NCR:		V	ORK ORE	DER NON-CONFORMA	ANCE (NCR)	)		
DATE	STEP	Description of NC		., .,	ion B	Verification	Approval	Approval
DAIL	JILI	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	QC Inspector
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Dart Aerospace L	₋td
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W/O:			WC	ORK ORDER CH	IANGES					
DATE	STEP	PRO	OCEDURE CHANGE			Ву		Qty `	Approval Chief Eng / Prod Mgr	Approval QC Inspector
									·	
			·						***************************************	
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Part No	:	PAR #:	Fault Cate	gory:	NC	R: Yes N	lo DQA:		Date:	
		esolution:						• •		
NCR:		·	WORK ORD	ER NON-CONFO	ORMANCE	(NCR)	)			
DATE	STEP	Description of NC Section A	Corrective Action Section B			0:0	Verifica	ication	Approval	Approval
			Initial Chief Eng	Action Descri Chief Eng	ption —————	Sign & Date	Section	Section C		QC Inspector
					•					
		,							-	
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•										

<sup>া:\</sup>fFORMS\Quality Assurance\approved QA\NCRWO RevE

NO.<u>240</u>

# AWS D17.1.2001 QUALIFICATION TEST RECORD

	Barday Elliott	
Job num	iber: 62176 8	
Part nun	mber: D205. 634.041	
Descripti	tion: 205 skid tube	
	Process: Tig[ Mig[ ]	
Base mat	teriel: Aluminian	
	: AC[  DC[ ] ]	

# TEST REQUIREMENTS AND RESULTS

Visual: Penetration:	pass[] fail[] pass[] fail[]
<u>UNACCEPTABLE</u>	
Cracks: Undercut: Pin holes: Overlap (cold lap) Porosity (surface): Coloration:	pass[] fail[] pass[] fail[] pass[] fail[] pass[] fail[] pass[] fail[] pass[] fail[]
Qualifier Desclay Elliott	Date of Test Coupon 10.09.30  Date of Test Coupon 10.09.30

The above named individual is qualified in accordance with AWS D17.1.2001 to weld